REMARKS

Claims 1-20 were examined. Claim 3 is amended. Claims 14-20 are canceled. Claims 1-13 remain in the Application.

I. 35 U.S.C. §103(a): Rejection of Claims 1-2 and 12-13

The Patent Office rejects claims 1-2 and 12-13 as being obvious over U.S. Patent No. 5,834,848 issued to Iwasaki ("Iwasaki") in view of U.S. Patent No. 5,935,372 issued to Rojstaczer ("Rojstaczer").

The Examiner relies upon Iwasaki to disclose all the elements of claims 1-2 and 12-13 however determines Iwasaki does not explicitly teach a composition disposed between the first substrate and the second substrate comprising a siloxane-based aromatic diamine as recited in Applicant's claim 1. Instead the Examiner relies upon Rojstaczer to teach this element determining it would have been obvious to one skilled in the art at the time the invention was made to modify the adhesive agent of Iwasaki with the adhesive composition of Rojstaczer to provide a better sealing solution for use in chip packages. See Detailed Action, at pages 3-4.

Applicant respectfully disagrees with the Examiner's rejection and submits there is no motivation to replace the adhesive between wiring substrate 12 of alumina and motherboard 21 of a glass epoxy resin (see Iwasaki, at Col. 10, lines 18-27) with the compliant adhesive sealant of Rojstaczer. The sealant of Rojstaczer is used to bond a metal lid (e.g. aluminum lid) to a ceramic package. Rojstaczer specifically teaches that although the adhesive sealant may be used to bond a plastic part to a ceramic package, "the invention is especially useful for bonding metal parts to ceramics packages." See Rojstaczer, at Col. 6, lines 42-43. The Patent Office says the motivation is in providing a "better sealing solution for use in chip packages." As discussed above, the adhesive in Iwasaki is used to bind a ceramic (wiring substrate 12) to a glass epoxy resin (motherboard 21 laminated with glass epoxy resin). Thus, upon viewing the teachings of Rojstaczer, one skilled in the art would only recognize the adhesive as providing a "better sealing solution" when it is used between a metal and ceramic. Accordingly, it would only be upon

viewing Applicant's disclosure, that one skilled in the art would recognize any advantage in substituting the adhesive taught by Rojstaczer with that of Iwasaki. As the Examiner is no doubt aware, such hindsight reconstruction is an inappropriate basis for finding obviousness. Furthermore, although it may have been obvious to try the substitution relied upon by the Examiner, "obvious to try" is also not an appropriate basis for finding obviousness.

Moreover, Rojstaczer does not say its composition is even compatible for use as an underfill composition between for example, a wiring substrate and a motherboard as in Iwasaki. It is interesting to note that Rojstaczer describes attaching chips to packages but does not describe its adhesive sealant for this role. See Rojstaczer, at Col. 1, lines 11-13. Beyond compatibility, the application notes that typical underfill materials and mold compounds are generally characterized for reliability performance based on four properties: low coefficient of thermal expansion (CTE), for low modulus of elasticity, adhesion, and high fracture toughness. See Application at page 2, paragraph [0007]. Similarly, Iwasaki teaches that "the buffer layer 41 is made of copper or aluminum material having a thermal expansion coefficient close to that of the motherboard." See Iwasaki, at Col. 10, lines 58-62. Buffer layer 41 is deposited as an "X" between motherboard 21 and wiring substrate 12. See Iwasaki, Figure 2. It appears Iwasaki also deposits another composition also labeled 41 but not clearly identified. Since buffer layer 41 addresses the CTE issues, there is no motivation to replace this composition or the other composition with the adhesive sealant by Rojstaczer. Rojstaczer notes low modulus and adhesion as typical properties of organic adhesives. See Rojstaczer, at Col. 1, lines 17-20. Rojstaczer does not disclose the CTE or fracture toughness of the adhesive sealant and does not suggest that its adhesive sealant would be any better in terms of performance as an underfill composition than the underfill composition(s) in Iwasaki. Thus, the teachings of the references would not motivate one skilled in the art to combine the references to arrive at Applicant's invention. Accordingly, the Examiner has not set forth a sufficient motivation or suggestion to combine the references therefore a prima facie case of obviousness has not been established.

For the foregoing reasons, Applicant respectfully submits, claim 1 is not obvious over the cited references. Claims 2 and 12-13 depend from claim 1 and therefore contain all the limitations

of that claim. For at least the reasons stated with respect to claim 1, claims 2 and 12-13 are not obvious over the cited references.

II. Allowable Subject Matter

Applicant notes with appreciation the Patent Office's indication that claims 3-11 contain allowable subject matter. The Patent Office suggests claims 3-11 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Accordingly, Applicant has amended claim 3 to include all the limitation of the base claim and any intervening claims and respectfully submits claim 3 is now in condition for allowance. Similarly, claims 4-11 depend from claim 3 and incorporate the limitations thus claims 4-11 are also in condition for allowance.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

Respectfully submitted,

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